

REMARKS

Applicants wish to thank Examiner Koslow for the helpful and courteous discussion with Applicants' Representative on February 20, 2007. The following is intended to expand upon the discussion with the Examiner.

Applicants respectfully request reconsideration of the application, as amended, in view of the following remarks.

The present invention as set forth in **Claim 1** relates to a moulding, comprising:

a plastic matrix which comprises a transparent plastic,

a soluble **fluorescent dye** and

a **scattering agent** whose refractive-index difference from said plastic matrix is +/- from 0.003 to 0.2,

wherein a **white pigment** whose refractive-index difference from said plastic matrix is from +0.4 to 1.5 is also present, at a concentration of from 0.001 to 0.1% by weight.

The present application describes a molding based on a combination of three elements: a fluorescent dye, a scattering agent and a white pigment. The combination of the three elements shows synergetic effects as can be seen from the examples, e.g. enhancement of the brilliance of colors of molding compositions.

The specification discloses in the paragraph bridging pages 1 and 2:

Surprisingly, the effect of addition of the white pigment at an unusually low concentration is a marked rise in colour brightness. The mouldings of the invention in particular have a reflectance which, measured in % using a spectrophotometer to DIN 5036, is higher by at least 10% than that of a corresponding moulding without white pigment. This rise in brightness in colour is clearly discernible, even by the naked eye.

The present application is concerned with the problem of providing a moulding with improved brightness of color. The examples in the specification, which use the claimed

combination of a fluorescent dye (see Table 1 at page 7 of the specification), a scattering agent (BaSO_4) and a white pigment (TiO_2 or ZnS), show clearly that the problem is indeed solved. The improved brightness of color can be observed under daylight conditions D65 (incident light condition) already from visual assessment for all colors in comparison to the mouldings without addition of whitening pigments. The red colored mouldings show increased L^* - and a^* -values standing for increased brightness and increased red-values. The mouldings colored orange, yellowish green and yellow show even more increased L^* -, a^* - and b^* -values with reflectance-values that are more than 10% increased in comparison to the mouldings without addition of whitening pigments.

Table 2 below is copied from page 8 of the specification.

Results:

Tab. 2 CIELAB reflection colour values L*, a*, b* for D65/10° illuminant

Exp. No.	Shade	L*	a*	b*	Reflectance in %	Visual assessment in D65 daylight
113T	orange	56.29	23.66	94.86	24.2	yellowish-orange fluorescence, somewhat cloudy
144M	orange	66.10	29.80	105.55	35.5	yellowish-orange fluorescence, very bright
113Q	yellowish green	62.34	-31.70	80.00	30.8	yellow fluorescence, somewhat cloudy
144K	yellowish green	70.53	-31.21	90.56	41.5	yellow fluorescence, very bright
113S	red	34.77	60.93	59.94	8.4	red fluorescence, somewhat cloudy
144E	red	37.81	65.73	59.53	10.0	red fluorescence, very bright
144G	red	37.40	64.83	58.77	9.8	red fluorescence, very bright
148A	yellow	64.40	-30.14	90.36	33.3	yellow fluorescence, somewhat cloudy
148F	yellow	72.31	-28.77	99.64	44.1	yellow fluorescence, very bright

The specification discloses at page 9, 1st paragraph:

As can be seen from the colour values, and also from visual assessment, the products produced using the barium sulphate/titanium dioxide (zinc sulphide) combination have markedly greater brightness of shade. Red has a higher red value, yellow has a higher yellow value, etc. The improvement is also clearly detectable visually.

JP6-67612A (corresponds to EP 0 559 083 A2) and US 6,375,864 (Phillips et al) fail to disclose or suggest the combinations of a fluorescent dye, a scattering agent and a white pigment in a polymer matrix and the superior results shown in the examples of the present specification.

Notably, the EP equivalent of JP6-67612A is discussed at page 1, lines 9-12 of the specification. Here a fluorescent dye and a white pigment are used. As the white pigment either TiO₂ or BaSO₄ are used. However, these are not used in combination. There is no disclosure or suggestion of a combination of a white pigment and a light scattering agent as claimed.

US 6,375,864 discloses daylight/nightglow colored phosphorescent plastic compositions and articles. Whitening pigments are mentioned as optional additives. Inert fillers are also mentioned as optional additives. However in the 24 examples no whitening pigments and no inert fillers are employed. There are only mixtures of different phosphorescent pigments with daylight phosphorescent dyes.

Thus, each of JP6-67612A and US 6,375,864 (Phillips et al) fail to disclose or suggest the combinations of a fluorescent dye, a scattering agent and a white pigment in a polymer matrix and the superior results shown in the examples of the present specification.

Therefore, the rejections of Claims 1-7 and 9 under 35 U.S.C. § 103(a) over each of JP06-67612 and US 6,375,864 are believed to be unsustainable as the present invention is neither anticipated nor obvious and withdrawal of these rejections is respectfully requested.

The objection to Claims 6 and 9 is obviated by the amendment of these claims.

The rejection of Claims 2 and 9 under 35 U.S.C. § 112, 1st paragraph, and the rejection of Claim 9 under 35 U.S.C. § 112, 2nd paragraph, are traversed.

As set forth at page 4, lines 17-19 of the specification, titanium dioxide, zinc oxide or zinc sulphide are examples of preferred white pigments. Accordingly, the language of Claim 2 is appropriate and there is no discrepancy between the claim language and the specification. Thus, this rejection should be withdrawn.

Further, page 4 lines 20 to page 5, line 5 and page 5, lines 24-35 of the specification clearly provide support for Claim 9 and thus this rejection should be withdrawn.

The objection to the disclosure is obviated by the amendment of the specification. An obvious typographical error has been corrected.

This application presents allowable subject matter, and the Examiner is kindly requested to pass it to issue. Should the Examiner have any questions regarding the claims or otherwise wish to discuss this case, he is kindly invited to contact Applicants' below-signed representative, who would be happy to provide any assistance deemed necessary in speeding this application to allowance.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.
Norman F. Oblon

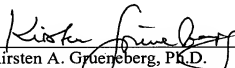
Customer Number

22850

Tel: (703) 413-3000

Fax: (703) 413 -2220

(OSMMN 06/04)


Kirsten A. Gruenberg, Ph.D.
Registration No. 47,297

NFO:KAG\la